

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of : Attorney Docket No. 2004_1509A
Nobuyuki MASUMURA et al. : **Confirmation No. 3936**
Serial No. 10/508,788 : Group Art Unit 3656
Filed September 23, 2004 : Examiner James Pilkington
TAPE-SHAPED MOLDING AND BELT FOR : **Mail Stop: APPEAL BRIEFS-PATENTS**
BALL CHAIN

APPELLANTS' REPLY BRIEF

Commissioner for Patents
P.O. Box 1450
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Sir:

The following is an Appellants' Reply Brief, submitted under the provisions of 37 CFR § 41.41. The Reply Brief is further to the Appeal Brief filed July 31, 2009, and in response to the Examiner's Answer dated October 2, 2009.

STATUS OF CLAIMS

The status of the claims is as follows:

Claims 1-16, 27-33, and 45 have been canceled.

Claims 17-26, 34-44, and 46-51 stand finally rejected.

Claims 17-26, 34-44, and 46-51 are appealed.

A complete copy of all of the claims was provided in the Claims Appendix, attached to the Appeal Brief filed July 31, 2009.

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

Whether claims 17-26, 34-43, and 49-51 are unpatentable under 35 USC § 103(a) over EP 1083347 to Matsumoto et al. in view of *The Science and Engineering of Materials* by Askeland and US 4,536,536 to Kavesh et al.

Whether claims 44 and 48 are unpatentable under 35 USC § 103(a) over Matsumoto in view of Askeland and Kavesh, and further in view of US 5,852,135 to Kanai et al.

Whether claim 46 is unpatentable under 35 USC § 103(a) over Matsumoto in view of Askeland and Kavesh, and further in view of US 6,103,805 to Kojima et al.

Whether claim 47 is unpatentable under 35 USC § 103(a) over Matsumoto in view of Askeland and Kavesh, and further in view of US 6,610,766 to Kitamura et al.

ARGUMENTS

The following arguments are in addition to those set forth in the Appeal Brief filed July 31, 2009.

Claims 17-26, 34-43, and 49-51 have been rejected under 35 USC § 103(a) as being unpatentable over Matsumoto in view of Askeland and Kavesh.

Appellants submit that each of these claims is allowable over the cited prior art for at least the reasons set forth in the Appeal Brief filed July 31, 2009 and the additional arguments set forth below.

On page 4, lines 9-10 of the Examiner's Answer, the Examiner states that both resins (constituting the tape and the stretched fibrous member disposed therein) in Matsumoto "are substantially identical by virtue of comprising principal components of identical resins (both resins can have carbon)". The Appellants understand the Examiner's position to be that carbon is a common principal component of both resins, and therefore all the carbon-containing resins are identical. This is contrary to what one of ordinary skill in the art would understand in the resin-processing art. Generally, resins are classified according to their basic chain structures and functional groups. Thus, Appellants submit that the Examiner has made an error in recognizing these resins as "identical resins".

Additionally, on page 4, lines 11-12, the Examiner states that Matsumoto does not disclose that the fibers are oriented longitudinally along the stretched fibrous member. However, Appellants submit that the element Matsumoto fails to disclose is "molecular chains of the thermoplastic resin forming the stretched fibrous member" that are oriented longitudinally along the stretched fibrous member, not "the fibers".

On page 8, line 8 to page 9, line 7, the Examiner makes another error in the recognition of "identical resins". In particular, the Examiner argues that Matsumoto discloses a belt and a reinforcement member which are both made of "substantially identical" resins, since both resins can be made of synthetic resin and can accept a carbon filler as an additive. The Examiner's argument that two resins are substantially identical, if the two resins can accept a common filler, lacks merit. As stated above, one of ordinary skill in the resin processing art would understand that resins are classified according to their basic chain structures and functional groups. Therefore, one of ordinary skill in the art would not identify two resins as "substantially identical" merely because they could accept a common filler.

Moreover, the specification of the present application, on page 13, lines 10-13 states that "[t]he resins moldable together and having a good adhesion with each other need not be entirely identical but may be those including principal components of identical resins... ". That is, the resins being moldable together and having good adhesion with each other refers to the resin forming the stretched fibrous member and the resin forming the tape matrix, as is understood from the sentence bridging pages 6 and 7 of the specification, and claim 2, as filed in the related PCT application. Thus, since the claims should be read in light of the specification, it is clear that the determination of whether the resin forming the stretched fibrous member and the resin forming the tape matrix are substantially identical or not is based on their common moldability and their adhesion with each other. Such an interpretation is also consistent with the common understanding of those of ordinary skill in the resin processing art that resins are classified based on basic chain structures and functional groups and not with criterion based on the acceptability of a common filler. Moreover, this interpretation is consistent with the description on page 24, lines 12-22 of the present specification regarding the comparison between Example 4 (using PVDF (polyvinylidene fluoride) for both stretched filament and tape) and Example 5 (a comparative example, using 6/66 copolymer nylon for the stretched filament and PVDF for the tape).

On the other hand, the Examiner's argument of that two resins are identical based on the acceptability of a common filler is not related to the adhesion of the two resins. Moreover, since the present invention is not concerned with the incorporation of a reinforcement filler, there is no reason to believe that the substantial identity of the two resins would be determined based on the acceptability of fillers.

On page 9, line 8 of the Examiner's Answer, the Examiner states that Askeland discloses a fiber which is a molecular chain as broadly defined, since a resin is made of a number of fiber/molecule chains. Appellants submit that Askeland (*see* Fig. 16-12) merely discloses that glass fiber-reinforced epoxy resin exhibits a greater tensile strength in the direction of the fiber orientation than in the other orientations. The Appellants submit that there is no evidence that (glass) fiber is comparable with a molecular chain as broadly defined. Molecular chains of a thermoplastic resin can constitute resin fiber, but they are essentially different from each other in concept as well as substance.

Askeland discusses the effect of the orientation of fiber dispersed in the (epoxy resin)

matrix, whereas claim 17 relates to the orientation of resin molecular chains which per se form the fibrous member which is not disclosed or rendered obvious by Askeland.

On page 10, lines 1-12, the Examiner states that in light of Kavesh one of ordinary skill in the art would turn to any fiber member and subject it to pre-stretching in order to improve the physical characteristics of the fiber.

Kavesh simply discloses that a stretched polyethylene fiber of a specific class is usable as a reinforcement material for thermoplastic resins. This is distinct from a reinforcing material of a synthetic resin of which the tensile strength has been enhanced by addition of carbon (fiber) filler as disclosed in paragraph [0034] of Matsumoto, and similarly by Askeland. Kavesh does not disclose or render obvious that such a stretched resin fiber has improved reinforcement material relative to a filled resin fiber as disclosed in Matsumoto, when added to a matrix resin, particularly a resin matrix comprising a substantially identical resin as the stretched fiber resin.

Appellants submit that the unique reinforcing technique of the present invention of reinforcing a resin material (i.e., a tape) with a substantially identical resin material of a different physical state (i.e., a stretched fiber), recited in claim 17, is not disclosed nor rendered obvious by the combination of Matsumoto, Askeland and Kavesh.

Therefore, Appellants submit that independent claim 17 and its dependent claims are allowable over the cited prior art.

Moreover, Appellants submit that the additionally cited references (i.e., Kanai, Kojima and Kitamura) do not overcome the deficiencies of the combination of Matsumoto, Askeland and Kavesh, and therefore, each of the claims of the present application is allowable over each of the above combinations of prior art for the reasons set forth above and for the reasons set forth in the July 31, 2009 Appeal Brief.

Conclusion

For the reasons set forth above, as well as those provided in the previously filed Appeal Brief, the invention of claims 17-26, 34-44 and 46-51 is clearly patentable over the combination of references relied upon by the Examiner. Thus, reversal of the above-discussed rejections is respectfully requested.

Respectfully submitted,

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